(d) if so, the estimated area of land which can be made fertile?

THE MINISTER OF STATE IN THE MINISTRY OF WATER RESOURCES (SHRIMATI BIJOYA CHAKRAVARTY): (a) to (d) As most of the annual rainfall occurs during 90 to 100 days of monsoon season in intense spells, this results in generation of large quantity of water in the Ganga river basin during the rainy season. In 1980 the Ministry of Water Resources (then known as the Ministry of Irrigation) formulated a National Perspective Plan for Water Resources Development which envisage inter-linkages among Peninsular rivers and Himalayan rivers of transferring water from water surplus basins to water deficit areas for optimum utilisation of water resources. The Government of India established the National Water Development Agency (NWDA) in 1982 as an autonomous Society to carry out water balance and feasibility studies for the National Perspective Plan. Himayalan Rivers Development Component envisages construction of storage reservoirs on the main Ganga and the Brahmaputra and their principal tributaries in India and Nepal alongwith inter-linking canal system to transfer surplus flows of the eastern tributaries of Ganga to the west, apart from linking of the main Brahmaputra with the Ganga. As per the pre-feasibility studies carried out by NWDA about 98 Billion Cubic Meter of water is available for diversion to the water deficit areas from the tributaries of Ganga namely, Kosi, Sarda, Ghagra and Gandak as well as from main Ganga at Chunar.The Peninsular River Development Component *inter alia* provides for inter-linking of Mahanadi-Godavari-Krishna-Pennar-Cauvery. The surplus waters available in Mahanadi and Godavari as also from the tributaries of Brahmaputra *via* Ganga are proposed to be transferred to Cauvery basin after meeting the requirement of drought prone areas in Krishna and Pennar basins.

Agreement on safety of downstream structures

760. SHRI RAMA MUNI REDDY SIRIGIREDDY: Will the Minister of WATER RESOURCES be pleased to state:

(a) whether it is a fact that the Central Soil and Materials Research Station and the Norwegian Geo-technical Institute have entered into an

institutional co-operation programme/agreement in the field of biological hazards in dam reservoirs for safety of downstream structures recently; and

(b) if so, the details of the agreement?

THE MINISTER OF STATE IN THE MINISTRY OF WATER RESOURCES (SHRIMATI BIJOYA CHAKRAVARTY): (a) and (b) The Central Soil and Materials Research Station, New Delhi and the Norwegian Geo-technical Institute, Oslo have entered into an Institutional Cooperation Programme/agreement in the filed of "investigation of Geological Hazards in Dam Reservoirs for Safety of Downstream Structures".The programme is funded by Norwegian Agency for Development and Cooperation (NORAD) for a sum of Rs. 1.70 crores approximately. The agreement has been made for a period of three years with effect from November, 2002. The following areas of cooperation will be in focus:

(i) Geological and geo-technical investigations in dam reservoirs for identification of hazards to dams and downstream structures.

(ii) Stability analysis for studying the effects of filling reservoir behind dams.

(iii) Stability analysis of main dam structures and reservoir rim under full reservoir and sudden drawdown condition.

(iv) Concrete/construction material characterization in respect *6i* existing dams.

(v) Detection of seepage, cracks etc., by using latest state of art equipments.

(vi) Risk and reliability analysis.

(vii)Instrumentation for assessing the quality and integrity of materials used in construction of water resource structures and for evaluation of safety of ageing dams.

(viii) Evaluation of methods for rehabilitation of surface and sub-surface water resource structures.

Linking of North-Eastern Brahmaputra river with Farakka

761. DR. ALLADI P. RAJKUMAR: Will the Minister of WATER RESOURCES be pleased to state:

(a) whether Government have undertaken a feasibility study regarding linking of North-Eastern Brahmaputra river with Farakka in West Bengal via-Bangladesh;

(b) whether State Governments have been consulted in this regard because this will be a short route for linking the above river; and

(c) if so, the details in this regard?

THE MINISTER OF STATE IN THE MINISTRY OF WATER RESOURCES (SHRIMATIBIJOYA CHAKRAVARTY): (a) to (c)The Central Water Commission in 1982 had prepared a Feasibility Report on Jogighopa Barrage and Brahmaputra-Ganga Link Canal Project flowing through Bangladesh by gravity, as the first phase of development/augmentation of the flows of the Ganga during dry season by diversion of Brahmaputra waters to the Ganga.The second phase of the proposal envisages creation of backup storages by construction of two dams on major northern tributaries of the Brahmaputra river, *viz.,* Dihang and Subansiri. The proposal was placed before the Indo-Bangladesh Joint Rivers Commission. However, due to reservations expressed by the Government of the Peoples' Republic of Bangladesh, the proposal was not pursued further.

improvement of water supply in Northern India

762. SHRI KARNENDU BHATTACHARJEE: Will the Minister of WATER RESOURCES be pleased to state:

(a) whether some of the major States in Northern India are likely to face a gruelling shortage of water during the current year;